



The 11-plus and access to grammar schools

The current under-representation of children from disadvantaged backgrounds at grammar schools has formed a key part of the debates sparked by the government's recent Green Paper proposal to remove the ban on new grammar schools. The existence of this under-representation is not contested: as outlined in a recent EPI report, only 2.5 per cent of grammar school pupils are eligible for free school meals (FSM, a proxy for disadvantage), compared with 13.2 per cent across all state-funded secondary schools.¹ Even when comparing grammar school intakes only with pupils living in their local areas, FSM pupils remain significantly under-represented; at the average grammar school, the odds of a pupil being eligible for free school meals are around one-fifth of all pupils living within reasonable travel distance of the school.² The extent to which access to grammar schools can be widened, however, remains a point for debate. Tackling the issue requires an understanding of the barriers which currently exist as part of the admissions process to grammar schools, particularly the 11-plus entrance test.

The 11-plus is an admissions test which is usually taken by grammar school candidates during their final year at primary school. It is designed to assess aptitude in order to enable identification of high ability pupils, although the format and administration of the test varies between areas and schools. From existing evidence, it is apparent that the under-representation of disadvantaged pupils in grammar schools derives very largely from two key barriers relating to the 11-plus. Firstly, the average attainment of FSM pupils is below that of their non-FSM peers, meaning that there is a significantly lower proportion of FSM pupils with the levels of attainment required to pass the 11-plus. Secondly, even high-attaining FSM pupils are disproportionately less likely to enter grammar schools, either because they do not enrol for the 11-plus or because they do not pass the test.³ This policy analysis focuses particularly on the first of these challenges.

The attainment gap barrier

As documented in EPI's annual report, the attainment gap between FSM and non-FSM pupils is substantial: by the age of 5 it is already 4.3 months; this grows over the course of primary school and stands at 9.6 months by the age of 11.⁴ Figure 1 below demonstrates the implications of this for admission to a grammar school: pupils are ranked according to their attainment in Key Stage 2 tests

¹ J. Andrews, J. Hutchinson, and R. Johnes, *Grammar schools and social mobility*, Education Policy Institute, September 2016, p.22.

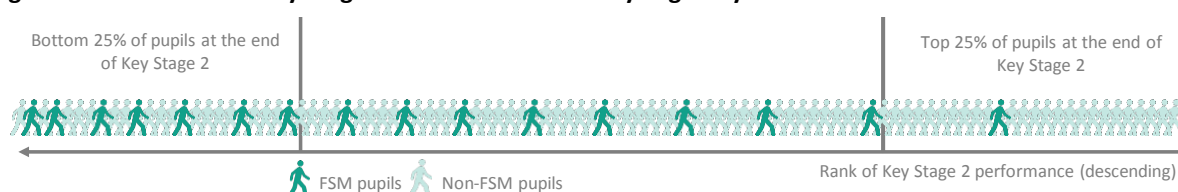
² J. Andrews and R. Johnes, *Faith Schools, Pupil Performance and Social Selection*, Education Policy Institute, December 2016, p.26.

³ J. Andrews, J. Hutchinson, and R. Johnes, *Grammar schools and social mobility*, Education Policy Institute, September 2016, pp.25-26; Kent County Council, *Grammar schools and social mobility: Select Committee*, June 2016, p.23; A. Skipp and F. Sadro, 'Outreach Activity' in J. Cribb, D. Jesson, L. Sibietta, A. Skipp, and A. Vignoles, *Poor Grammar: Entry into Grammar Schools for disadvantaged pupils in England*, The Sutton Trust, November 2013, pp.16-18.

⁴ N. Perera and M. Treadaway with P. Sellen, J. Hutchinson, R. Johnes and L. Mao, CentreForum (now EPI), April 2016, p.42.

in 2015, with each figure representing about 6,000 pupils. In the absence of data on 11-plus results (unlike Key Stage 2 and 4 tests, the results of the 11-plus are not published at either a national or local level), Key Stage 2 outcomes are here used as a measure of academic attainment at age 11. These results are used to estimate the distribution of pupils who might be likely to pass the 11-plus (those in the top 25 per cent at the end of Key Stage 2) and those whose attainment is below this threshold. As Figure 1 shows, FSM pupils are clustered towards the bottom of the attainment distribution, with very few appearing amongst the top 25 per cent.

Figure 1: Distribution of Key Stage 2 attainment in 2015 by eligibility for free school meals⁵



Private tutoring

The attainment gap barrier appears to be exacerbated by the widespread use of private tutoring in order to prepare children for the 11-plus; this may also be contributing to the under-representation even of high-attaining FSM pupils at grammar schools. As such coaching operates outside of the mainstream system, it is difficult to identify precisely the extent to which it occurs, but survey and interview evidence provides an indication of its considerable scale. Polling conducted earlier this year by Ipsos MORI on behalf of The Sutton Trust found that 18 per cent of young people aged 11-16 in England and Wales had received private tuition as part of preparation for a school entrance exam.⁶ Given that the 163 grammar schools in England are not spread evenly throughout the country, the proportion of candidates receiving tuition for grammar school entry is likely to be much higher than this: a smaller-scale survey carried out in Sevenoaks (in the fully selective local authority of Kent) found that 44.7 per cent of children entering the 11-plus had received private tuition before sitting the exam.⁷ Family income is correlated with access to private tuition more generally, with surveys consistently finding that pupils from lower income households are less likely to access such provision. The Ipsos MORI polling carried out earlier in 2016 categorised respondents according to the Family Affluence Scale into low, medium, and high affluence groups, and found that twice the proportion of 11-16 year olds from high affluence families had received some form of private tuition compared with pupils of low affluence backgrounds.⁸

Figure 2: Proportion of 11-16 year olds who had received some form of private tuition, by family background, 2016⁹

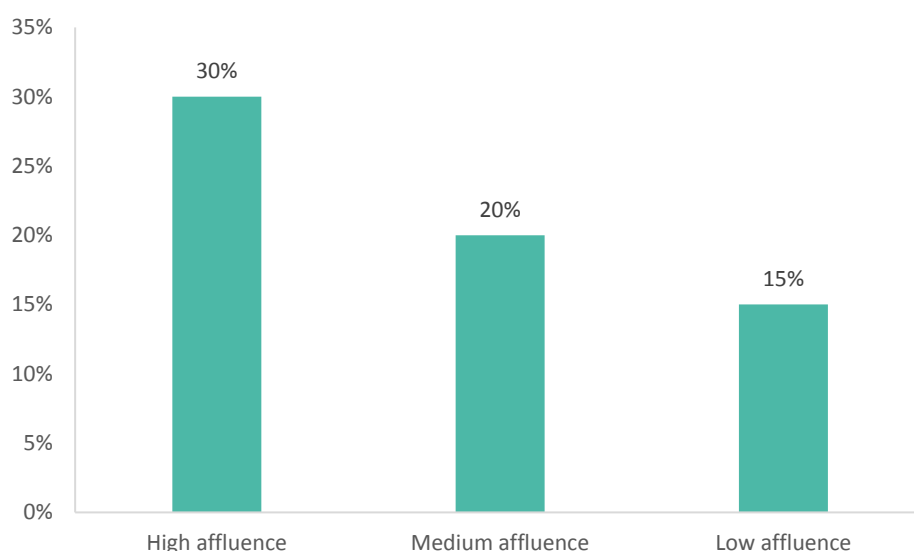
⁵ J. Andrews, J. Hutchinson, and R. Johnes, *Grammar schools and social mobility*, Education Policy Institute, September 2016, p.24.

⁶ P. Kirby, 'Shadow Schooling: Private tuition and social mobility in the UK', The Sutton Trust, September 2016, pp.19-20.

⁷ Sevenoaks Action for Community Education (ACE), 'Survey Findings: The future of Sevenoaks Secondary Education', June 2013, p.58.

⁸ P. Kirby, 'Shadow Schooling: Private tuition and social mobility in the UK', The Sutton Trust, September 2016, pp.23-27.

⁹ Produced from data published in: P. Kirby, 'Shadow Schooling: Private tuition and social mobility in the UK', The Sutton Trust, September 2016, p.26.



Is it possible to create a tutor-proof 11-plus?

Acknowledging the inequities caused by this disparity in access to private tuition in preparing for the 11-plus, Theresa May stated in her speech launching the Green Paper that: *While there is no such thing as a tutor-proof test, many selective schools are already employing much smarter tests that assess the true potential of every child. So new grammars will be able to select in a fair and meritocratic way, not on the ability of parents to pay.*¹⁰ The difficulty with this statement lies with the unsubstantiated claim that there already exist tests which are effectively identifying the raw ability and potential of children. This assumes, firstly, that it is possible to measure the innate ability of a child, independent of his or her environment (including, for example, the quality of their primary education and the opportunities available to them at home). Most 11-plus exams attempt to assess this through a combination of tests which examine, on the one hand, curriculum knowledge (such as maths and English), and, on the other hand, IQ (such as verbal and non-verbal reasoning). An individual's knowledge is clearly very largely determined by their learning environment; its inclusion in 11-plus assessment rests on the assumption that all pupils who have attended primary school have had an equal opportunity to learn the required knowledge and skills as part of the curriculum. However, this does not account for differences in quality of primary school, which affects pupil progress and learning.¹¹ In terms of IQ assessment, the consensus amongst academics is now that intelligence does not represent fixed, innate ability, but that it is profoundly shaped by environmental as well as genetic influences. These environmental factors include early nutrition, home environment, and formal school education. Most psychologists accept that it is probably not possible to distinguish the relative importance of heredity and environment in determining intelligence, and indeed the balance between the two is likely to vary for different individuals and in different circumstances.¹² **As a consequence, both the knowledge and the IQ elements of 11-plus tests assess skills which are significantly influenced by a child's surroundings.**

Indeed, evidence from a number of neuroscience research projects demonstrates that cognitive skills continue to develop during adolescence and into early adulthood. In particular, a recent study looked at the development of relational (or matrix) reasoning, which involves the ability to identify

¹⁰ T. May, 'Britain, the great meritocracy: Prime Minister's speech', Prime Minister's Office, September 2016.

¹¹ Department for Education and Skills, *Statistics of Education: Variation in Pupil Progress 2003*, July 2004, p.21.

¹² T. McDevitt and J. Ormrod, 'Effects of Heredity and Environment on Intelligence' in *Child Development and Education*, 2007, pp.291-296.

abstract relationships between different items. It concluded that training in relational reasoning can improve performance in people at any stage of adolescence and early adulthood; individuals in late adolescence were particularly receptive to this training. As the authors note, this indicates that such assessment cannot identify innate ability, even though school entrance exams often draw on matrix reasoning in an attempt to do so.¹³ Therefore, whilst assessments can be made more accessible by designing questions that do not draw on specific cultural references and by focusing on material or skills which all pupils have had an opportunity to practise, it is difficult to see how they can measure the ‘true potential’ of pupils.

Secondly, recent evidence suggests that there does not yet exist a test which has succeeded in substantially reducing the imbalance in FSM and non-FSM pupils passing the 11-plus. Attempts have already been made to design and introduce ‘tutor-proof’ 11-plus tests, with Kent and Buckinghamshire both serving as notable examples. In Kent, a new 11-plus test was introduced by Kent County Council in September 2014. Heralded as tutor-proof, it included a new English element (alongside maths and reasoning tests) in order to place greater emphasis on the school curriculum taught in primary schools to all candidates and therefore reduce the potential impact of private tuition. Yet in the first year, the number of privately educated pupils passing the entrance exam dropped by only 1 per cent, with a simultaneous rise of 1 per cent in the number of state-educated pupils.¹⁴

A similar attempt was made in Buckinghamshire, where a new 11-plus was introduced in 2013 (for the cohort entering secondary school in 2014); this was likewise intended to be more resilient to the impact of coaching than was its predecessor. In contrast to all other local authorities, enrolment for the 11-plus in Buckinghamshire occurs on an opt-out basis, and therefore the majority of pupils sit the test in this local authority. The element of self-selection is therefore largely removed. Even so, analysis indicates that with the introduction of the new test, the pass rate for pupils from state schools in fact dropped from 23 per cent for the 2013 entry cohort to 20 per cent for the 2014 entry cohort. Despite small increases in some years since, the pass rate has not yet regained the level that it was in the final year before the new test was introduced: recently released data shows that it stands at 21 per cent for the 2017 entry cohort. At the same time, the pass rate for privately educated pupils has increased from 53 per cent for the 2014 entry cohort to 63 per cent in the 2017 entry cohort.¹⁵

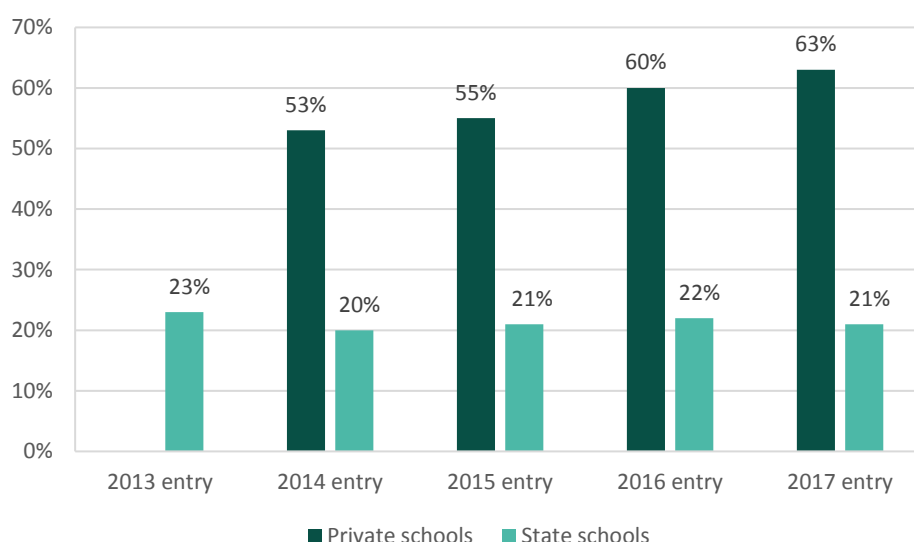
Figure 3: 11-plus pass rates in Buckinghamshire, by private and state school pupils, 2013-17 entry cohorts¹⁶

¹³ L. Knoll, D. Fuhrmann, A. Sakhardande, F. Stamp, M. Speekenbrink, and S. Blakemore, ‘A Window of Opportunity for Cognitive training in Adolescence’, *Psychological Science*, November 2016.

¹⁴ BBC News, ‘New Kent 11-plus ‘has little impact’ on pass rate’, 29 July 2015.

¹⁵ R. Hickman, K. Simmons, and N. Skipper, Letter to Justine Greening, Local Equal Excellent, 26 July 2016; R. Hickman, *Who benefits? Buckinghamshire’s 11+ exam and outcomes for children*, Local Equal Excellent, October 2015, pp.3-4; R. Hickman, Private correspondence with R. Johnes, December 2016; S. Trivedi, ‘Bucks pupils faring worse on 11-Plus than out-of-county students, proves test is ‘abject failure’, campaign group Local Equal Excellent claims’, *Bucks Free Press*, 25 November 2016.

¹⁶ The 2013 cohort entry was the final cohort to take the old exam; the 2014 entry cohort was the first under the new exam. Data relating to the pass rate of private school pupils for the 2013 cohort is not available.



In addition, access specifically for disadvantaged pupils appears to have remained very challenging even following the introduction of the new test. **For the 2014 entry cohort, the pass rate for FSM pupil was under 4 per cent, with only 10 of the 276 FSM pupils entered for the 11-plus achieving above the pass mark.**¹⁷

The Buckinghamshire 11-plus provider, the Centre for Evaluation and Monitoring (CEM) at Durham University, has since removed its promotional literature which claimed that its test would assess ‘natural’ ability, and its Director, Professor Robert Coe, has stated that, *The concept of ability is very problematic and comes with a lot of other baggage... Whatever system you use it is imprecise, there are false positives and negatives and probably more of those than people realise... we are interested in trying to make the system fairer. Even though it is a murky world there are lots of things we can do to make the system better.*¹⁸ In practice, therefore, it seems highly unlikely that the effects of additional tutoring, or indeed the quality of primary school and home learning environment, can ever be fully eliminated and, whilst it may be possible to design tests which are more widely accessible, there does not yet seem to be a clear understanding of the most effective mechanisms for achieving this.

Should grammar schools set a lower qualifying score for disadvantaged pupils taking the 11-plus?

The Green Paper further suggests that new or expanding grammar schools might be required to operate quotas, whereby a certain proportion of places are reserved for pupils from low income backgrounds. The issue of quotas has been addressed in more detail in a recent EPI report.¹⁹ Here, however, a couple of questions are briefly raised in relation to this proposal. Implementing quotas might result in a larger proportion of FSM pupils attending grammar schools. Yet the attainment gap is such that these pupils are likely to have lower average attainment than their non-FSM peers. Indeed, at the King Edward VI grammar schools in Birmingham, which are already operating quotas,

¹⁷ R. Hickman, K. Simmons, and N. Skipper, Letter to Justine Greening, Local Equal Excellent, 26 July 2016; R. Hickman, *Who benefits? Buckinghamshire’s 11+ exam and outcomes for children*, Local Equal Excellent, October 2015, p.5.

¹⁸ F. Millar, ‘Tutor-proof’ 11-plus professor admits grammar school test doesn’t work’, *The Guardian*, 12 September 2016.

¹⁹ J. Andrews and J. Hutchinson, *Grammar schools and social mobility: further analysis of policy options*, Education Policy Institute, December 2016.

pupils eligible for pupil premium are required to achieve a 'qualifying' score, lower than the standard pass mark, in order to be eligible for a place in the pupil premium quota. Analysis based on four selective local authorities has estimated that if the proportion of grammar school pupils eligible for free school meals were to reflect the proportion of FSM pupils in their local areas, then the most common maths and English score at Key Stage 2 would be 4.8 for these pupils, compared to 5.4 for non-FSM children (i.e. a Level 4a, compared to a Level 5b).²⁰

This is not necessarily problematic. What needs to be considered, however, is whether grammar schools would have a similar effect as they do now on attainment if they were educating a more academically and socially diverse intake. Evidence relating to this (in particular, Key Stage 4 results for an affected cohort), is not yet available, including from the King Edward VI grammar schools in Birmingham; changes allowing schools to prioritise pupils eligible for the pupil premium were only extended to all schools in the 2014 School Admissions Code (academies and free schools had previously been permitted to do this if specified in their funding agreement). It may therefore be that grammar schools are well-equipped to deal with this challenge or that they are ineffective at doing so, or that success on this measure varies between different schools. In addition, whilst grammar schools accommodating higher proportions of FSM children with lower 11-plus scores would still be very clearly identifiable as grammar schools, it is questionable how acceptable such a policy might be to parents of non-FSM children who risk competition from FSM pupils subject to a lower 11-plus pass threshold.

Quotas and lower pass marks for disadvantaged pupils constitute an attempt to ameliorate the impact of the attainment gap on the intake of grammar schools, rather than tackling the root of the problem. The measure may increase the proportion of FSM pupils in grammar schools, but it will not close the attainment gap at age 11; on the other hand, closing the attainment gap at age 11 would render quotas redundant and at the same time serve the interests of FSM pupils with lower attainment. This suggests that, even if quotas and lower qualifying scores are introduced as an interim measure, the ultimate goal should be to reduce and ultimately eliminate the attainment gap before age 11 through interventions in the early years and at primary school.²¹

²⁰ P. Nye, 'How many poor children do we want to go to grammar school', Education DataLab, September 2016.

²¹ For the importance of the early years in child development, see: R. Johnes with J. Hutchinson, *Widening the gap? The impact of the 30-hour entitlement on early years education and childcare*, CentreForum (now EPI), May 2016, pp.19-23.